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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/577,913

05/01/2006

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EXAMINER

FIELDS, DORON D

ART UNIT

PAPER NUMBER

4143

MAIL DATE

DELIVERY MODE

04/16/2008

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/577,913	<b>Applicant(s)</b> HAYASHI ET AL.	
	<b>Examiner</b> DORON D. FIELDS	<b>Art Unit</b> 4143	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) 5,6,8 and 9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 May 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>1 May 2006 and February 15 2008</u> .                         | 6) <input type="checkbox"/> Other: _____                          |



***Detailed Action***

***Status of Claims***

1. This action is in reply to the application filed on 1 May 2006.
2. Claims 5-6 and 8-9 have been withdrawn from consideration.
3. Claims 1-4 and 7 are currently pending and have been examined.

***Information Disclosure Statement***

4. The Information Disclosure Statements filed on 1 May 2006 and 15 February 2008 have been considered. An initialed copy of the Form 1449 is enclosed herewith.

***Drawings***

5. Figure 29-33 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

6. The abstract of the disclosure is objected to because of repeated information. Lines 8-9 state "and a circulating member of resin ..." The information is duplicated in lines 15-16 that state "the circulating member is made of resin ..."

Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

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(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-3, and 7 rejected under 35 U.S.C. 102(b) as being anticipated by Ebina et al. (US-PAT-NO: US-6,089,117 A)

**Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

**Claim 1:**

**Ebina et al., as shown, discloses the following limitations:**

*A ball screw device comprising:*

- *a screw shaft comprising a spiral first screw groove on an outer periphery thereof (see at least screw 1 and ball rolling groove 5);*
- *a nut screw-engaged with the screw shaft (see at least Fig 2, nut 2), comprising:*
  - *a spiral second screw groove formed on an inner periphery thereof corresponding to the first screw groove (see at least Fig 2, load rolling groove 6); and*
  - *a pair of circulating holes on side surface thereof (see at least Fig 2, fitting holes 8);*
- *a plurality of rolling elements rollably mounted in a load region formed between the first and second screw grooves (see at least Fig 2, balls 11);*
- *a circulating member made of resin (see at least Fig 2, ball circulating tubular body 3), comprising:*
  - *a rolling-element circulating path formed therein (see at least Fig 2, no load ball path 10), which introduces the rolling element rolling in the load region from one of the pair of circulating holes to an outside of the nut, and also returns the rolling element to the load region via other of the pair of circulating holes; and*

- *both ends fitted to the pair of circulating holes (see at least Fig 7, tubular pieces 15); and*
- *a metallic holding member for fixing the circulating member onto the nut (see at least Fig 1, fixture 9).*

**Claim 2:**

**Ebina et al., as shown, discloses the following limitations:**

*The ball screw device according to claim 1 (shown above in the rejection of claim 1),*

- *wherein the holding member is manufactured by sheet metal press processing (the claimed invention is defined by its structure, as such, the process of making the holding member is not given patentable weight. Furthermore, it would have been obvious to one skilled in the art at the time of the invention to manufacture the hold down member by machine press, thus shaping the holding member to a desired shape).*

**Claim 3:**

**Ebina et al., as shown, discloses the following limitations:**

*The ball screw device according to claim 2 (shown above in the rejection of claim 2),*

- *wherein the holding member is manufactured by drawing processing (the claimed invention is defined by its structure, as such, the process of making the holding member is not given patentable weight. Furthermore, it would have been obvious to one skilled in the art at the time of the invention to manufacture the hold down member by a drawing process, thus shaping the holding member to a desired shape).*

**Claim 7:**

**Ebina et al., as shown, discloses the following limitations:**

*The ball screw device according to claim 1 (shown above in the rejection of claim 1),*

- *wherein the circulating member comprises legs which fit in the circulating holes of the nut at both ends thereof (see at least Fig 8, ball circulating tubular body 3 and tubular pieces 15), and*
- *wherein a path for scooping up the rolling elements and a path for returning the rolling elements are formed in the legs so as to be inclined relative to an outer periphery of the leg, respectively (see at least Fig 8, no load ball path 10 and guide hole 10b).*

***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. Claim 4 rejected under 35 U.S.C. 103(a) as being unpatentable over Ebina et al. (US-PAT-NO: US-6,089,117 A) in view of Rohlinger (US-PAT-NO: 5,373,755 A).

**Claim 4:**

**Ebina et al., as shown, discloses the following limitations:**

*The ball screw device according to claim 1 (shown above in the rejection of claim 1),*

**Ebina et al. does not disclose the following limitations, but Rohlinger, however, as shown does:**

- *wherein the holding member covers 60 % or more of a part of the circulating member, which is exposed from the side surface of the nut (see at Least Fig 1, clamp 52).*

It would have been obvious to one skilled in the art at the time of the invention to replace the metallic holding member of Ebina et al. with a clamp of greater surface area as done by Rohlinger to achieve a securer attachment of the circulating member to the ball screw device as a result of the increased contact area between the circulating member and the metallic holding member.

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Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Doron D. Fields** whose telephone number is **571.270.3107**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **JAMES A. REAGAN** can be reached at **571.272.6710**.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

Any response to this action should be mailed to:

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or faxed to **571-273-8300**.

Hand delivered responses should be brought to the **United States Patent and Trademark Office**  
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/Doron D Fields/Examiner, Art Unit 4143  
28 March 2008  
/James A. Reagan/  
Supervisory Patent Examiner, Art Unit 4143